

AOOS hosts visitors to Alaska



AOOS and Alaska Sea Grant hosted a reception in March for NOAA's Deputy Under Secretary for Oceans and Atmosphere Mary Glackin.

Also in March, Josie Quintrell, Executive Director of the National Federation of Regional Associations visited with her son Sam (left) and competed in the Tour of Anchorage Nordic ski race.

New AOOS Data Team announced

Eight teams submitted proposals in response to the AOOS open competition for a five-year contract for AOOS data management services and products. Following a lengthy review conducted by an independent panel of data and management experts, the Anchorage firm of Axiom Consulting and Design was ranked highest by the panel. The AOOS Executive Committee approved the panel's recommendation during its August 6 meeting.

According to AOOS Executive Director Molly McCammon, the Axiom proposal, developed under the leadership of its director Rob Bochenek, and in partnership with the Alaska Department of Fish and Game, was "the strongest team and proposal assembled and provides a clear vision for taking AOOS data management services and products to a new level. We look forward to working with them and with all of our AOOS partners to increase stakeholder access to ocean information."

A special fall issue of the *AOOS Update* will feature the new team.

Army Corps of Engineers seeks collaborations



Those attending the AOOS-Army Corps of Engineers meetings in Anchorage include: (Back row) Bill Birkemeier, Linda Lillycrop, Clint Padgett, Darcy Dugan, and Dave Easter; (Front row) Trish Opheen and Molly McCammon.

Researchers with the U.S. Army Corps of Engineers recently met with AOOS staff, board members and agency representatives to discuss further collaborations among Corps personnel at the national and district levels with AOOS partners in Alaska, and especially other state and federal agencies. A full-day workshop attended by more than 25 people

highlighted projects underway in Alaska, as well as national coastal monitoring and data collection.

Bill Birkemeier, ACE Representative to IOOS, and Linda Lillycrop, ACE Liaison to IOOS, led the national ACE team. They joined Col. Reinhard Koenig, Commander, Alaska District, and Patricia Opheen from the Alaska District office, who emphasized the value of Corps project teams joining forces with other agency researchers to improve storm surge forecasts and wave models, as well as climate change impacts on coastal engineering. The workshop was also attended by Regional Coordinator Dave Easter from the national IOOS office in Silver Spring, MD.

"This workshop was an excellent opportunity to improve our collaboration strategies with AOOS and many other federal agencies and organizations involved with data gathering related to oceans," stated Col. Koenig.

Alaska Regional Round-up

Arctic

Arctic plastic debris

Reported August 6, 2010 by Captain Bob Shears, C/V Tukpuk, between Wainwright and Barrow:

"During recovery of an RUV, we entered into the center of a loop current, or rather an area devoid of current. The circumference and driver(s) of this eddy are unknown. The area seemed to have more sea birds than were observed during the transit from Wainwright and return route along the coast.

We also noted a density of plastic particles in the water column: white particles and fibers in every cubic foot to depths of approximately 10ft observable from the surface. Ninety-nine percent of the plastic was less than 10mm diameter. Bowhead whales are well known to feed in this area

The large quantity of garbage in this eddy may be evidence that it is not a temporary anomaly."

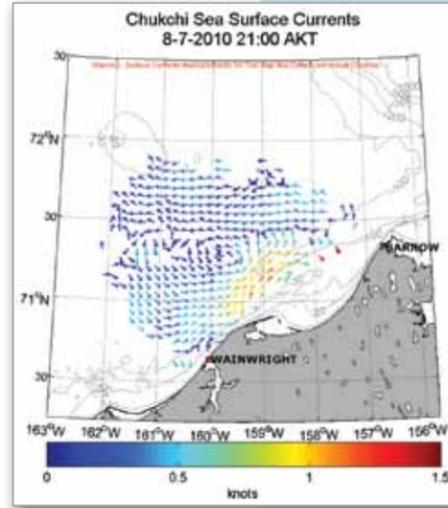
Bering Sea A Colder Ocean?

Oceanographers report that 2010 is the coldest year yet in the recent four-year trend of a colder Bering Sea, colder even than 2008. And unlike in the Arctic, scientists and fishermen are reporting extensive springtime sea ice cover that lingers further south than usual.

These four recent cold years in the eastern Bering Sea followed a sequence of warm years earlier in the century.

Gulf of Alaska WaveRider Buoy

AOOS has funded a new WaveRider buoy to be placed in lower Cook Inlet near Anchor Point in spring 2011. The buoy will focus on wave height and direction to help mariners travel safely and to help forecast modelers make accurate predictions. Real-time data from the buoy will be streamed through the AOOS web portal.



The location of the sighting correlates with a shifting eddy observed by the UAF ocean current radar, www.ims.uaf.edu/HF_radar/ (above).

AOOS

The Eye on Alaska's Coasts and Oceans

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Update
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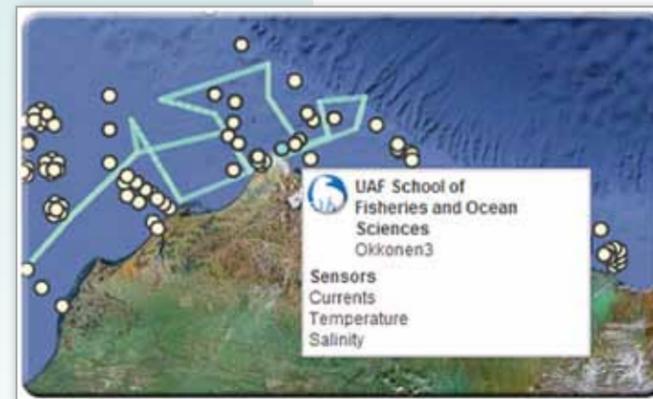
AOOS launches Arctic Research Assets Map

AOOS recently launched the Arctic Research Assets Map (ARAM), a web-based, interactive tool that gives resource managers and community members a visual inventory of where oceanographic data is being gathered during the open water field season. With the increase in scientific research and monitoring ongoing in the Arctic, ARAM will assist with region-wide planning, research logistics, public education and outreach, and support for other collaborations.

Easily accessible on the AOOS website, www.aos.org, the interactive map features the location and metadata for moorings, buoys, AUV and ship transects, and other instrumentation in Arctic waters, and in the future, will provide links to actual data, including real-time data.

AOOS thanks the many partners involved in creating this online tool, including Axiom Consulting and Design, who developed the web interface, along with the government agencies and industry that provided data.

Please send ideas for additional assets, or feedback about ARAM to AOOS Program Manager Darcy Dugan at dugan@aos.org.



New energy device powers oceanography

After two years of design and development, oceanographers at the University of Alaska Fairbanks are installing a new alternative energy device along the Arctic coast of Alaska. It will use wind, solar, and biodiesel energy to power scientific instruments in remote areas, where sources of electricity are often scarce.

"In principle, the device means that we can deploy the radar systems anywhere along Alaska's coast," said Tom Weingartner, professor of physical oceanography and the principal investigator for the project.

The module will power high-frequency radars that map sea surface currents along the coast of the Beaufort Sea. The radars send signals over the water's surface, where they are reflected off the top of the waves. The radar signals are bounced back to the antennae and data are transmitted to scientists in Fairbanks

in real-time.

"The radar and remote power module allows us to better understand marine ecosystems processes, inform engineering designs for offshore activities, assist in search and rescue operations, and, in the event of a marine spill, assist in clean-up response," added Weingartner.

The radars typically are powered by shore-based power sources, such as those available in homes or com-

mmercial buildings, he said. "Power sources are few and far between in Alaska and, where available, are not necessarily ideally suited for sampling."

The module is also equipped to collect meteorological and oceanographic data and houses communications equipment that allows researchers in Fairbanks to configure the device via satellite. The module weighs about 6,000 pounds, but breaks down into modular components weighing less than 120 pounds each, so that two people can deploy, service or relocate the device.

"We made the decision to utilize renewable energy technology due to our requirements for a relatively maintenance-free, lightweight and autonomous power supply," said Hank Statscewich, researcher at the UAF School of Fisheries and Ocean Sciences and the project lead.

"The hybrid combination of solar, wind, batteries and a small backup generator meets the load demands of the equipment while maintaining a compact footprint," added Statscewich. The \$890,000 project is funded by the Department of Homeland Security.

Note: The Alaska Ocean Observing System funded testing of the radars in Prince William Sound during its PWS demonstration project. One of the lessons learned from that project was the need for development of a new power source for remotely deployed radars.

Story and photo courtesy SeaDiscovery (www.seadiscovery.com), a website devoted to disseminating information on ocean science.

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Ocean observing in Cook Inlet

On March 29–30, more than 40 scientists and stakeholders attended a workshop in Anchorage to discuss ocean observations and forecast models in Cook Inlet.

The workshop, co-sponsored by Cook Inlet Regional Citizens Advisory Council (CIRCAC), the Kachemak Bay Research Reserve (KBRR), the National Oceanic and Atmospheric Administration (NOAA), and the Oil Spill Recovery Institute (OSRI), had two main goals:

- Provide a forum for the modeling community to share information on existing modeling efforts for circulation and forcing conditions in Cook Inlet and the Northern Gulf of Alaska, especially their strengths and weaknesses and gaps in ocean observations to support these models; and
- Assess the needs for existing and future numerical forecast models and the observations to support them.



The Cook Inlet region is known for its strong tidal currents, oil and gas extraction and transport, shipping, and proximity both to major population centers and active volcanoes. (image courtesy alaskageography.com)

Increase the number of observations

Many gaps exist in observations necessary to strengthen models and improve forecasts. Three modeling working groups will recommend and refine the types and locations of new observations while a stakeholder working group will document the needs of users. Initial recommendations, in order of priority, included CTD lines, HF radars, and moorings.

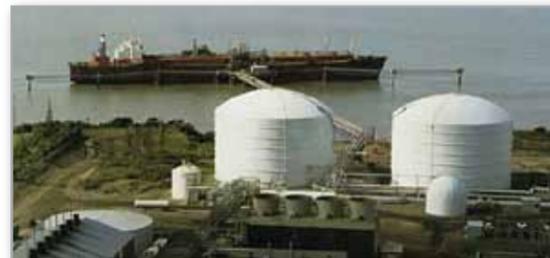
Develop a Cook Inlet publication

AOOS will produce a publication and online resource to help educate the public about the need for and use of Cook Inlet oceanographic information and to create further opportunities for partnerships and funding.

For more information on the progress of Cook Inlet modeling efforts, contact AOOS Program Manager Darcy Dugan at dugan@aoos.org.



Top: Significant gas related activity occurs in Cook Inlet. Oil rigs must be able to withstand strong tidal currents and large chunks of sea ice. (AlaskaStock)



Bottom: A gas transport ship sits at her moorings in Nikiski, with LNG storage tanks in the foreground. (Marine Exchange of Alaska)



Participants agreed to move forward in four main areas:

Establish a Cook Inlet Working Group

AOOS will work closely with scientists and modelers to develop a modeling and observing working group involving collaborations and close communication among partners. Already underway, monthly conference calls keep everyone up to date on meteorology, wave, and circulation models, as well as ancillary data collection.

Create a Cook Inlet Data Exchange

Participants highlighted the value of creating an online database that includes historical and real-time data and model output. In the coming months, AOOS will develop and house the data exchange, placing the highest priorities on assembling better bathymetry for Cook Inlet and creating a seamless connection of the land/water datums, particularly in tidal flats.

COSEE Highlights

In January 2010, AOOS partner COSEE Alaska sponsored the first annual Alaska Ocean Leadership Award for Ocean Literacy, which was awarded to the Kenai Fjords Tours Marine Science Explorer Program. As part of CIRI Alaska Tourism, Kenai Fjords Tours has provided unique vessel-based programs for more than 36,000 students and teachers since 1995.

The Ocean Literacy Award goes to an individual, team or institution that has made a breakthrough in promoting ocean literacy in Alaska among a segment of the general population via formal or informal education, outreach or other communications.

Visit Kenai Fjords Tours online at www.kenaifjords.com.



Reaching out to ferry passengers

To reach summer tourists and ferry passengers, AOOS has again co-sponsored the design, production, and distribution of Delta-Sound Connections, a newspaper focusing on natural history and scientific research in the Prince William Sound and Copper River Delta regions near Cordova.

Kate Alexander of the Prince William Sound Science Center in Cordova produces the colorful publication, which is printed and distributed at various outlets in Prince William Sound communities, including aboard the Alaska State Ferry.



This summer, the AOOS section of the publication (above) focused on preliminary results of the 2009 Prince William Sound Field Experiment.

Alaska Marine Policy Forum

Every other month, AOOS and Alaska Sea Grant host a marine policy teleconference, open to the public. The forum includes updates on marine affairs from the Alaska congressional offices, the Governor's office in Washington D.C., state and federal agencies, the University of Alaska, and other entities. Those who join find it an opportunity to hear the latest on national and state legislation, budgets

and policy, as well as upcoming events and initiatives and to query policy makers and staff.

Fall 2010 forum calls are scheduled for September 29, and December 1 at 1 pm Alaska time. For call-in information or to add items to the agenda, contact Darcy Dugan, 907-644-6718, or e-mail dugan@aoos.org.

Marine operations, coastal hazards, and climate change trends

In May, AOOS hosted a series of workshops and working groups to guide development of its forthcoming regional coastal observing system five-year proposal and plan. Organized around the themes identified by the 11 regional ocean observing systems that make up the national Integrated Ocean Observing System (IOOS), the workshops focused on marine operations, coastal hazards, ecosystems, and climate change trends.

Workshop participants spanned the gamut from stakeholders, consumers of marine observations and information (including agencies, scientists, and

industry), and implementers of marine operations, monitoring, and management. Despite the different workshop themes and diversity of participants, a number of common issues and needs emerged.

Major topics included better sea ice forecasting, increase in sea state observations, more accurate and timely storm surge forecasting, additional long-term data collection for climate trends, and improved access to real-time updates and other information needed by mariners out on the water. Draft workshop summaries have been posted on the AOOS website.



Thematic workshops addressed issues such as coastal erosion in Alaska, right (photo, US Geological Survey) and marine operations, above (photo, US Coast Guard).

